

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

**NUTRITIONAL VALUE AND CHARACTERISTICS OF  
OPERATIONAL RATIONS, CERTAIN RATION  
SUPPLEMENTS, MEALS, AND FOOD PACKETS**

Headquarters, Department of the Army, Washington, D. C.  
4 March 1971

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**1. Purpose.** This bulletin will inform Medical Department personnel of the characteristics, components, and nutritive content of the various operational rations, certain ration supplements and food packets used by the Army. It will assist in meeting requirements of AR 40-25 and AR 40-5 in evaluating the nutritional adequacy of operational rations under various conditions in theaters of operation, and in making adjustments in the caloric content of the ration in accordance with climatic conditions and physical activity of the troops. The subsistence items described are those most commonly used by the Army and do not include special purpose items used by the other armed services.

**2. Operational Rations.** a. *General.* Operational rations are developed primarily for troop feeding under special conditions or situations, with the assumption that no food or insufficient food will be available from indigenous sources and inadequate facilities will be available for the transportation and holding of fresh or perishable foods. Operational rations are based on factory processed foods and are not normally intended for protracted use. Wherever practicable, fresh and/or raw frozen meats, vegetables and

fruits should be provided in lieu of the canned and other processed components of operational rations to alleviate monotony and prevent the depression of appetite commonly observed when processed foods are consumed as the sole diet for long periods of time. Exceptions to this policy are made safely only where sufficient evidence has been gathered to establish the improbability of these adverse effects despite repeated consumption of a specific processed ration. Thus far the Developmental Meal, Quick Serve (proposed for entrance into the supply system as Meal, Combat, 6-Man) is the only packaged operational ration which has been approved as the sole source of food for a period as long as 120 consecutive days. The Developmental Meal, Uncooked, 25-Man (proposed for entrance into the supply system as the Meal Assemblage, Large Group) has been approved for only 30 consecutive days pending availability of additional data on effects of prolonged consumption.

**b. Standard B Ration for Armed Forces.**

(1) This ration is similar to the Field Ration A, used in the feeding of troops in garrison in the continental United States, except that canned and dehydrated foods are substituted for perishable foods. It is designed for feeding units in theaters of opera-

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tions where kitchen facilities, with the exception of refrigeration, are available for group feeding. The foods comprising the Standard B Ration are issued in bulk, and the quantities to be requisitioned and issued are prescribed by SB 10-495. This supply bulletin also contains a sample cyclic menu which demonstrates the variety of combinations which can be prepared from the available components.

(2) The **B Ration** is nutritionally adequate as shown in table I, and furnishes over 3900 calories. The caloric content of the ration may be adjusted according to the nutritional requirement and physical activity of the troops. Such adjustments should be made by varying individual items rather than by increasing or decreasing the total number of rations issued.

**c. Meal, Combat, Individual.** This is designed for issue as the tactical situation dictates, either in individual units as a meal or in multiples of 3 as a complete ration. It replaced the Ration, Combat, Individual (C-Ration). There are 12 different menus, each containing 1 canned meat item, 1 canned fruit or dessert item; 1 B unit; an accessory packet; and a spoon. Four can openers are provided in each case of 12 meals. Each case weighs 25 pounds and requires approximately 0.8 cubic feet of storage space. The nutritional characteristics are given in table I.

**b. Ration, Individual, Trail, Frigid.**

(1) This ration was developed for trail use under cold weather conditions. It combines high caloric content with minimum weight and bulk. Although the ration may be eaten cold, certain items are more acceptable when heated. Fuel tablets, small one-burner stoves or Yukon stoves and individual mess gear should be furnished for preparing and eating this ration.

(2) The Ration, Individual Trail, Frigid, contains a meat food product bar, canned processed cheese, canned prefried bacon, cereal bars, crackers, seasonings, soup and gravy base, dehydrated soup, beverages, assorted candies, almonds, raisins, gum, matches, cigarettes, toilet paper and paper towels. It furnishes approximately 4,659 calories, and has the nutritional composition shown in table I.

(3) Although a standard item, the ration has never been routinely procured and stocked. It weighs 4 pounds and is packaged 8 per case in a corrugated box inclosed in a waterproof bag. Three sheets of non-oven fabric are included for use in cleaning utensils.

**3. Hospital Rations.** a. **B. Hospital (BH) and B Hospital Liquid (BHL).** Hospital rations are planned for subsisting personnel who are patients in Army hospitals during periods in which the Standard B Ration is normally issued. It is estimated that 70 percent of patients will be fed the Standard B Ration

and 30 percent will require modified diets. Half of these will require a solid or semisolid diet, while the remainder will need a liquid diet. To meet these requirements, the special rations have been divided into the B Hospital (BH) and B Hospital, Liquid (BHL). The BH Ration can be used to prepare the following modified diets: high protein, light, soft, fiber-restricted, bland, sodium-restricted, dental soft, diabetic, and calorie-restricted. The BHL Ration is used to prepare clear liquid, full liquid, and dental liquid diets. Recipes and related data on food preparation for menu items listed on hospital BH and BHL ration accompany the menus in the manual to ascertain nutritional adequacy of the menus for modified diets.

**b. Austere Hospital Rations (AH).** In the initial phase of operations when forces would be subsisted on packaged operational food packets or meals, the Austere Hospital Ration will be utilized. Certain selected items of issue are authorized to provide ingredients for modified diets for patients unable to eat the operational food packets.

**4. Ration Supplement, Aid Station.** a. This supplement was developed to provide hot stimulating beverages for casualties at battalion aid stations and clearing stations to assist in preventing shock and to promote the comfort and general well-being of casualties. It is used in situations where it is impracticable to prepare subsistence items of the operational rations or where the consumption of such foods is contraindicated.

**b.** This supplement contains soluble coffee, soluble tea and milk beverage powders packed in individual envelopes to furnish 100 8-ounce drinks. This includes 60 instant coffee, 10 instant tea, and 30 instant, flavored milk drink. Each milk drink provides 550 calories. Dry cream and sugar are also contained in individual envelopes for use with the tea and coffee. These products are soluble or dispensable in either hot or cold water although heating is recommended. Plastic drinking tubes and toilet paper are also a part of the supplement. One box of 100 drinks weighs 16 pounds and requires approximately 1.01 cubic feet of storage space.

**5. Ration Supplement, Beverage Pack.** This supplement was developed to make additional beverages available to troops subsisting on individually packaged rations in tropical areas without compromising the suitability of those rations for global use. It furnishes fruit beverage bases, tea and sugar to supplement each 100 Meal, Combat, Individual or Food Packets, Long Range Patrol issued. Two supplemental packs are provided in a shipping case having a gross weight of 22 pounds and a volume of 0.99 cubic feet.

**6. Food Packets.** a. General. Food packets are used to furnish packaged subsistence to individuals for use over a short period of time when tactical considerations do not permit the use of complete rations.

**b. Food Packet, Individual, In-Flight.** This food packet was developed for the Air Force, but it may be consumed by Army personnel while passengers on aircraft. It furnishes an adequate meal and consists of units of meat, fruit, bread, dessert and an accessory packet. Ten varieties of meat items, 6 desserts and 4 fruits are provided. It contains approximately one-third of the nutrients prescribed by the Army Dietary Standard as shown in table 1. The packet is designed to be eaten either hot or cold but heating the meat unit improves its palatability. Twenty packets are packaged in a case weighing 39 pounds and requiring 1.3 cubic feet of storage space.

**c. Food Packet, Long Range Patrol.** This food packet is designed for use in remote areas for periods not exceeding 10 days where men are required to eat as individuals. Mess equipment is not required. The main food item in each of the 8 menus is a pre-cooked dehydrated food in an expendable reconstitution carton; it rehydrates in about 15 minutes in tepid water, less time in hot, or may be eaten dry, with drinking water. It is recommended that it be consumed in a rehydrated state. In addition, each packet contains coffee, cream, sugar, a cereal or dessert, a plastic spoon, toilet paper, matches and an oral hygiene device. Five of the menus include cocoa beverage powder. Packets weigh approximately 11 ounces and furnish approximately 1100 Calories.

**d. Food Packet, Survival, General Purpose.** A lightweight, all-purpose survival food packet designed for emergency use has been adopted for use by all military services. It is included in survival kits for Army aircraft. Food packets contain 4 food bars ran-

domly selected from 6 types available, plus instant coffee, sugar and soup and gravy base. These are packed in a rectangular can, weighing 12 ounces. A case of 24 weighs 20 pounds and requires 0.7 cubic feet of storage space. The nutritional characteristics are listed in table I.

**7. Ration Supplement, Sundries Pack.** This item is intended for use with the B Ration to provide post exchange-type items before normal facilities are available. It consists of a tobacco pack, a toilet article pack and a confection pack to meet the needs of 100 men per day. These packs contain a variety of tobacco products, shaving and toilet articles, and a selection of candy and gum. One pack weighs 47 pounds and occupies 1.9 cubic feet.

**8. Nutritional Composition.** For information and comparison, the military service daily dietary allowances, AR 40-25, are included in table I. This includes the nutritional compositions of the rations and food packets described above. Note that not all items listed provide the full amount of essential nutrients. Nevertheless, if the rations or packets are completely consumed and used only for the short periods intended, no permanent physiological change is to be expected and any change will be minor in degree under most operational conditions. Where meals or packets are supplied in various menus, differences in nutritional components may exist. An effort should be made to insure that a variety of menus is eaten to provide both relief from monotony of a single diet and a more balanced nutritional intake. Prolonged consumption of packaged rations may have a detrimental effect on morale of the troops and may also cause a loss of appetite with resulting decreased intake of nutrients to suboptimum levels. These rations should not be used when mobile or field kitchens are permitted.

Table I. Nutritional Composition of Rations and Food Packets<sup>1</sup>

Ration	Calories	Protein (gm)	Fat (gm)	Carbohydrat (gm)	Calcium (mg)	Iron (mg)	Vitamin A I.U.	Thiamin (mg)	Riboflavin (mg)	Niacin (mg)	Ascorbic acid (mg)
Standard B Meal, Combat,	3,950	118	150	532	1,080	25.5	8,180	1.65	2.16	25.4	77
Individual	1,185	46.9	53.7	135.7	296	7.9	3,400	1.29	1.23	10.2	53
Individual, Trail, Frigid	4,659	171	235	483	1,852	20.0	8,020	5.00	4.20	41.5	170
Food Packet, Individual, In - Flight	1,103	36.8	42.2	150.3	131	7.1	2,500	0.25	0.77	9.8	45
Food Packet, Long Range Patrol	1,103	59.8	50.0	108.1	360	6.3	3,414	1.05	0.79	13.8	77
Food Packet, Survival, General Purpose.	869	17.0	27.5	141.3	188	3.0	120	0.32	0.57	4.3	15
Daily Dietary Standards 2	3,400	100	(*)		800	14	5,000	1.7	2.0	22.0	60

<sup>1</sup> Data are presented for general guidance only and are correct as of November 1968. Improvements in components and ration design may result in changes in nutritional composition for future procurements.

<sup>2</sup> For moderately active male personnel of the military services in a temperate climate, age 17-25 years, height 68-70 in., weight 146-170 lbs. See AR 40-25.

<sup>3</sup> Fat should not exceed 40 percent of total caloric intake in planned menus. See AR 40-25.

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